

**State of California  
AIR RESOURCES BOARD**

**EXECUTIVE ORDER DE-09-012-01**

Pursuant to the authority vested in the Air Resources Board (ARB) by Health and Safety Code, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-02-003;

Relating to Exemptions under Section 38395 of the Vehicle Code, and Verification under Sections 2700 to 2711 of Title 13 of the California Code of Regulations (CCR)

DCL International, Incorporated  
Mine-X Sootfilter®

ARB has reviewed DCL International's (DCL) request for verification of the Mine-X Sootfilter® system. Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, the Executive Officer of ARB hereby finds that the Mine-X Sootfilter® system reduces emissions of diesel particulate matter (PM) consistent with a Level 3 Plus device (greater than or equal to an 85 percent reduction and meets the 2009 nitrogen dioxide emissions limit) (Title 13, CCR, Sections 2702 (f) and 2708). Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below, classifies the Mine-X Sootfilter® as a Level 3 Plus system for off-road and portable equipment using off-road diesel engines from the engine families listed in Attachment 1.

The aforementioned verification is subject to the following terms and conditions:

- Only one system may be installed per engine. For an engine with a dual exhaust system from the original equipment manufacturer (OEM) with two exhaust manifolds, two mufflers, etcetera, no more than one system may be installed per exhaust manifold.
- The engine must not be in an on-road truck auxiliary power unit, transport refrigeration unit, gantry crane, stationary application, marine vessel, or locomotive.
- The engine must be model year 1996 through 2011 and have an engine family name listed in Attachment 1.
- The engine must be certified for off-road applications.
- The application must have a duty cycle with an average temperature profile greater than or equal to 300 degrees Celsius for 30 percent of the operating cycle.

- The engine must be certified to a PM emission level of at most 0.2 grams per brake horsepower hour (g/bhp-hr), and greater than 0.01 g/bhp-hr.
- The engine must be rated to at least 100 horsepower and no more than 1,000 horsepower.
- The engine must not be certified by ARB as having exhaust gas recirculation.
- The engine must not have a pre-existing OEM diesel particulate filter.
- The engine may or may not have a pre-existing OEM oxidation catalyst.
- The engine must remain in its original certified configuration, except that if an OEM oxidation catalyst is present, it may be removed if the Mine-X Sootfilter<sup>®</sup> system is installed. Should the Mine-X Sootfilter<sup>®</sup> system be removed, the OEM oxidation catalyst must be re-installed, returning the engine to its original certified configuration.
- The engine must have a four-stroke combustion cycle.
- The engine can be turbocharged or naturally aspirated.
- The engine can be electronically or mechanically controlled.
- The engine must be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- Lube oil, or other oil, must not be mixed with the fuel.
- The Mine-X Sootfilter<sup>®</sup> must not be operated with a fuel additive, as defined in Title 13, CCR, Section 2701, unless explicitly verified for use with the fuel additive.
- The system must be installed with a backpressure monitor that notifies the operator when the backpressure limit is reached. The notification must occur and be clearly visible to the operator while the vehicle or equipment is in use.
- The product must not be used with any other systems or engine modifications without ARB and manufacturer approval.
- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of the Mine-X Sootfilter<sup>®</sup> system, manufactured by DCL of 241 Bradwick Drive, Concord, Ontario, Canada L4K 1K5, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, the Mine-X Sootfilter<sup>®</sup> system is exempt from the

prohibitions in Sections 38390 and 38391 of the Vehicle Code for installation on off-road vehicles using engines listed in Attachment 1.

This exemption is only valid provided the engines meet the aforementioned conditions.

The Mine-X Sootfilter<sup>®</sup> system consists of the following major system components, listed in order from exhaust inlet to outlet as they are arranged within the exhaust system of the vehicle: one inlet section, one or two catalyzed flow-through filters, one or two catalyzed wall-flow DPFs, and one outlet section. The Mine-X Sootfilter<sup>®</sup> system also includes a backpressure monitor and warning system. The major components of the Mine-X Sootfilter<sup>®</sup> system are identified in Attachment 2. Schematics of the approved product and engine labels are shown in Attachment 3.

The Mine-X Sootfilter<sup>®</sup> system is comprised of one or two catalyzed flow-through filters and one or two catalyzed wall-flow DPFs designed to filter the exhaust from a single engine. Mine-X Sootfilter<sup>®</sup> systems with multiple flow-through filters or DPFs that are individually-canned in parallel or in series (or any combination thereof) are not valid under this Executive Order. Channeling exhaust from a single engine through multiple individually-canned Mine-X Sootfilter<sup>®</sup> systems, deployed in parallel or in series or any combination thereof, is also not valid under this Executive Order unless the engine has a dual exhaust system as described above.

This Executive Order is valid provided that installation instructions for the Mine-X Sootfilter<sup>®</sup> system do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

DCL must ensure that installation of the Mine-X Sootfilter<sup>®</sup> conforms to all applicable industrial safety requirements.

Changes made to the design or operating conditions of the Mine-X Sootfilter<sup>®</sup> system, as exempted by ARB, which adversely affect the performance of the vehicle's pollution control system shall invalidate this Executive Order.

No changes are permitted to the device. ARB must be notified, in writing, of any changes to any part of the Mine-X Sootfilter<sup>®</sup> system. Any changes to the device must be evaluated and approved in writing by ARB. Failure to do so shall invalidate this Executive Order.

Marketing of the Mine-X Sootfilter<sup>®</sup> system using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order is prohibited unless prior written approval is obtained from ARB.

Identification must include both device and engine labels consistent with the requirements of Title 13, CCR, Section 2706, and Attachment 3 of this Executive Order. Changes or modifications to the label or label placement are prohibited without prior written approval from ARB.

This Executive Order does not apply to any Mine-X Sootfilter<sup>®</sup> system advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

As specified in Section 2706(j) (Title 13, CCR) of the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Procedure), ARB assigns each diesel emission control strategy a family name. The designated family name for the verification as outlined above is:

**CA/DCL/2008/PM3+/N00/OF/DPF01**

As stated in the Procedure, DCL is responsible for complying with recordkeeping requirements (Section 2702), honoring the required warranty (Section 2707), and conducting in-use compliance testing (Section 2709).

Proper engine maintenance is critical for the proper functioning of the diesel emission control strategy. The owner of the vehicle on which the diesel emission control strategy is installed is strongly advised to adhere to all good engine maintenance practices. Failure to document proper engine maintenance, including keeping records of the engine's oil consumption, may be grounds for denial of a warranty claim.

This Executive Order is valid provided that the diesel fuel used in conjunction with the device complies with Title 13, CCR, Sections 2281 and 2282, and if biodiesel is used, the biodiesel blend shall be 20 percent or less subject to the following conditions:

- The biodiesel portion of the blend complies with the American Society for Testing and Materials specification D6751 applicable for 15 parts per million sulfur content; and
- The diesel fuel portion of the blend complies with Title 13, CCR, Sections 2281 and 2282;

Other alternative diesel fuels such as, but not limited to, ethanol diesel blends and water emulsified diesel fuel are excluded from this Executive Order.

In addition to the foregoing, ARB reserves the right in the future to review this Executive Order and the exemption and verification provided herein to assure that the exempted and verified add-on or modified part continues to meet the standards and procedures of Title 13 CCR, Section 2222, et seq, and Title 13 CCR, Sections 2700 through 2711.

Systems verified under this Executive Order shall conform to all applicable California emissions regulations.

This Executive Order does not release DCL from complying with all other applicable regulations.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order.

This Executive Order hereby supersedes Executive Order DE-09-012 (dated August 24, 2009) and the conditional verification letter RAS-08-15 (dated January 24, 2008).

Executed at El Monte, California, and effective this 15<sup>th</sup> day of July 2011.

A handwritten signature in black ink, appearing to be 'R. Cross', written over a horizontal line.

Robert H. Cross, Chief  
Mobile Source Control Division

Attachment 1: ARB-Approved Engine Families for the DCL Mine-X Sootfilter<sup>®</sup> System  
Attachment 2: Parts List for the DCL Mine-X Sootfilter<sup>®</sup> System  
Attachment 3: Label for the DCL Mine-X Sootfilter<sup>®</sup> System